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NEWS 2 Jan 25 BLAST(R) searching in REGISTRY available in STN on the Web  
NEWS 3 Jan 29 FSTA has been reloaded and moves to weekly updates  
NEWS 4 Feb 01 DKILIT now produced by FIZ Karlsruhe and has a new update  
frequency  
NEWS 5 Feb 19 Access via Tymnet and SprintNet Eliminated Effective 3/31/02  
NEWS 6 Mar 08 Gene Names now available in BIOSIS  
NEWS 7 Mar 22 TOXLIT no longer available  
NEWS 8 Mar 22 TRCTHERMO no longer available  
NEWS 9 Mar 28 US Provisional Priorities searched with P in CA/CAPLUS  
and USPATFULL  
NEWS 10 Mar 28 LIPINSKI/CALC added for property searching in REGISTRY  
NEWS 11 Apr 02 PAPERCHEM no longer available on STN. Use PAPERCHEM2 instead.  
NEWS 12 Apr 08 "Ask CAS" for self-help around the clock  
NEWS 13 Apr 09 BEILSTEIN: Reload and Implementation of a New Subject Area  
NEWS 14 Apr 09 ZDB will be removed from STN  
NEWS 15 Apr 19 US Patent Applications available in IFICDB, IFIPAT, and IFIUDB  
NEWS 16 Apr 22 Records from IP.com available in CAPLUS, HCAPLUS, and ZCAPLUS  
NEWS 17 Apr 22 BIOSIS Gene Names now available in TOXCENTER  
NEWS 18 Apr 22 Federal Research in Progress (FEDRIP) now available  
NEWS 19 Jun 03 New e-mail delivery for search results now available  
NEWS 20 Jun 10 MEDLINE Reload  
NEWS 21 Jun 10 PCTFULL has been reloaded  
  
NEWS EXPRESS February 1 CURRENT WINDOWS VERSION IS V6.0d,  
CURRENT MACINTOSH VERSION IS V6.0a(ENG) AND V6.0Ja(JP),  
AND CURRENT DISCOVER FILE IS DATED 05 FEBRUARY 2002  
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FILE 'HOME' ENTERED AT 06:47:55 ON 28 JUN 2002

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COST IN U.S. DOLLARS

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ENTRY	SESSION
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FILE 'CAPLUS' ENTERED AT 06:48:03 ON 28 JUN 2002  
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FILE COVERS 1907 - 28 Jun 2002 VOL 136 ISS 26  
FILE LAST UPDATED: 26 Jun 2002 (20020626/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

CAS roles have been modified effective December 16, 2001. Please check your SDI profiles to see if they need to be revised. For information on CAS roles, enter HELP ROLES at an arrow prompt or use the CAS Roles thesaurus (/RL field) in this file.

=> s anti-freeze protein  
L1 11 ANTI-FREEZE PROTEIN

=> s lichen  
L2 5350 LICHEN

=> s glycosylation  
L3 24874 GLYCOSYLATION

=> s l1 and l2 and l3  
L4 1 L1 AND L2 AND L3

=> d l4

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2002 ACS

AN 2001:816714 CAPLUS

DN 135:357072

TI **Anti-freeze proteins**, their production and use

IN Berry, Mark John; Doucet, Charlotte Juliette; Lundheim, Rolv Sigmund; Sevilla, Marie-Pierre; Whiteman, Sally-anne

PA Unilever Plc, UK; Unilever Nv; Hindustan Lever Limited

SO PCT Int. Appl., 42 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	---	-----	-----	-----
PI	WO 2001083534	A1	20011108	WO 2001-EP3927	20010406
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,				

HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,  
 LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU,  
 SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN,  
 YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,  
 DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,  
 BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG

PRAI GB 2000-10314 A 20000427

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> FIL STNGUIDE

COST IN U.S. DOLLARS

SINCE FILE	TOTAL
ENTRY	SESSION
9.89	10.10

FULL ESTIMATED COST

FILE 'STNGUIDE' ENTERED AT 06:49:05 ON 28 JUN 2002  
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 COPYRIGHT (C) 2002 AMERICAN CHEMICAL SOCIETY, JAPAN SCIENCE  
 AND TECHNOLOGY CORPORATION, AND FACHINFORMATIONSZENTRUM KARLSRUHE

FILE CONTAINS CURRENT INFORMATION.

LAST RELOADED: Jun 21, 2002 (20020621/UP).

=> d 11 1-11

YOU HAVE REQUESTED DATA FROM FILE 'CAPLUS' - CONTINUE? (Y)/N:y

L1 ANSWER 1 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 2002:453321 CAPLUS

TI How can polar fishes survive underneath the sea ice? Effect of  
**anti-freeze protein**

AU Furukawa, Yoshinori; Nishimura, Yoshihiro; Yokoyama, Etsuro

CS Inst. Low Temp. Sci., Hokkaido Univ., Japan

SO Kotai Butsuri (2002), 37(6), 396-402

CODEN: KOTBA2; ISSN: 0454-4544

PB Agune Gijutsu Senta

DT Journal

LA Japanese

L1 ANSWER 2 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 2001:920685 CAPLUS

DN 136:148040

TI Guidelines for research and utilization of genetically modified fish

AU Pandian, T. J.

CS School of Biological Sciences, Madurai Kamaraj University, Madurai, 625  
 021, India

SO Current Science (2001), 81(9), 1172-1178

CODEN: CUSCAM; ISSN: 0011-3891

PB Current Science Association

DT Journal; General Review

LA English

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 3 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 2001:816714 CAPLUS

DN 135:357072

TI **Anti-freeze proteins**, their production and  
 use

IN Berry, Mark John; Doucet, Charlotte Juliette; Lundheim, Rolv Sigmund;  
 Sevilla, Marie-Pierre; Whiteman, Sally-anne

PA Unilever Plc, UK; Unilever Nv; Hindustan Lever Limited  
SO PCT Int. Appl., 42 pp.  
CODEN: PIXXD2  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001083534	A1	20011108	WO 2001-EP3927	20010406
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

PRAI GB 2000-10314 A 20000427

RE.CNT 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 4 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 2001:453093 CAPLUS

DN 135:75838

TI Processes and organisms for the production of **anti-freeze proteins**

IN Berry, Mark John; Griffiths, Allen; Hill, Philip John; Laybourne-Parry, Johanna; Mills, Sarah Victoria

PA Unilever PLC, UK; Unilever NV; Hindustan Lever Limited

SO PCT Int. Appl., 58 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001044275	A2	20010621	WO 2000-EP12396	20001205
	WO 2001044275	A3	20020321		
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				

US 2002072108 A1 20020613 US 2000-737297 20001215

PRAI GB 1999-29696 A 19991215

L1 ANSWER 5 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1999:422307 CAPLUS

DN 131:225026

TI Studies of a putative ice-binding motif in winter flounder skin-type anti-freeze polypeptide

AU Lin, Qingsong; Ewart, K. Vanya; Yang, Daniel S. C.; Hew, Choy L.

CS Hospital for Sick Children, Departments of Laboratory Medicine, Pathobiology and Biochemistry, Division of Structural Biology and Biochemistry, University of Toronto, Toronto, ON, Can.

SO FEBS Letters (1999), 453(3), 331-334

CODEN: FEBLAL; ISSN: 0014-5793

PB Elsevier Science B.V.

DT Journal

LA English

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L1 ANSWER 6 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1998:635626 CAPLUS

DN 129:244396

TI Frozen food product

IN Smallwood, Keith

PA Unilever N.V., Neth.; Unilever PLC

SO PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 5

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9841107	A1	19980924	WO 1998-EP1576	19980312
	W:	AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, GW, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG			
	ZA 9706472	A	19990122	ZA 1997-6472	19970722
	AU 9872079	A1	19981012	AU 1998-72079	19980312
	ZA 9802151	A	19990913	ZA 1998-2151	19980313
PRAI	EP 1996-305499	A	19960726		
	EP 1997-301719	A	19970314		
	WO 1998-EP1576	W	19980312		

L1 ANSWER 7 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1997:119158 CAPLUS

DN 126:130754

TI Method of making frozen compositions.

IN Clemmings, John F.; Zoerb, Hans F.; Rosenwald, Diane R.; Huang, Victor T.

PA Pillsbury Co., USA

SO PCT Int. Appl., 20 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9639878	A1	19961219	WO 1996-US6519	19960520
	W:	AU, BR, CA, CN, JP, MX			
	RW:	AT, BE, CH, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE			
	CA 2195950	AA	19961219	CA 1996-2195950	19960520
	AU 9657904	A1	19961230	AU 1996-57904	19960520
	AU 704570	B2	19990429		
	EP 783254	A1	19970716	EP 1996-914594	19960520
	EP 783254	B1	20010829		
	R:	DE, ES, FR, GB, IT			
	CN 1155831	A	19970730	CN 1996-190624	19960520
	CN 1078454	B	20020130		
	JP 10508759	T2	19980902	JP 1996-500532	19960520
	ES 2163627	T3	20020201	ES 1996-914594	19960520
PRAI	US 1995-472500	A	19950607		
	WO 1996-US6519	W	19960520		

L1 ANSWER 8 OF 11 CAPLUS COPYRIGHT 2002 ACS

AN 1996:639361 CAPLUS

DN 125:329457  
TI Synthesis of an **anti-freeze protein** type III  
by fragment condensation  
AU Brandtner, S.; Schleucher, J.; Lichte, E.; Stirnal, E.; Groeschke, P.;  
Griesinger, C.  
CS Institut fur Organische Chemie, Universitat Frankfurt, Frankfurt/Main,  
D-60439, Germany  
SO Pept. 1994, Proc. Eur. Pept. Symp., 23rd (1995), Meeting Date 1994,  
222-223. Editor(s): Maia, Hernani L. S. Publisher: ESCOM, Leiden, Neth.  
CODEN: 63MBAO  
DT Conference  
LA English

L1 ANSWER 9 OF 11 CAPLUS COPYRIGHT 2002 ACS  
AN 1995:69204 CAPLUS  
DN 122:82065  
TI Synthesis of an **anti-freeze protein**  
AU Brandtner, S.; Schleucher, J.; Griesinger, C.  
CS Inst. Org. Chem., Univ. Frankfurt, Frankfurt, D-60439, Germany  
SO Pept.: Chem., Struct. Biol., Proc. Am. Pept. Symp., 13th (1994), Meeting  
Date 1993, 49-50. Editor(s): Hodges, Robert S.; Smith, John A. Publisher:  
ESCOM, Leiden, Neth.  
CODEN: 60LXAW  
DT Conference  
LA English

L1 ANSWER 10 OF 11 CAPLUS COPYRIGHT 2002 ACS  
AN 1994:266141 CAPLUS  
DN 120:266141  
TI Extraction and isolation of antifreeze proteins from winter rye (*Secale  
cereale* L.) leaves  
AU Hon, Wai-Ching; Griffith, Marilyn; Chong, Pele; Yang, Daniel S. C.  
CS Dep. Biochem., McMaster Univ., Hamilton, ON, L8N 3Z5, Can.  
SO Plant Physiol. (1994), 104(3), 971-80  
CODEN: PLPHAY; ISSN: 0032-0889  
DT Journal  
LA English

L1 ANSWER 11 OF 11 CAPLUS COPYRIGHT 2002 ACS  
AN 1994:212024 CAPLUS  
DN 120:212024  
TI Protein purification from a complex solution with silica gel as sorbent  
IN Lusk, Lance T.; Goldstein, Henry  
PA Miller Brewing Co., USA  
SO U.S., 7 pp.  
CODEN: USXXAM  
DT Patent  
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 5278284	A	19940111	US 1992-882793	19920514
	EP 646594	A1	19950405	EP 1993-115953	19931002
	EP 646594	B1	19970604		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE				
	AT 154033	E	19970615	AT 1993-115953	19931002
	ES 2105033	T3	19971016	ES 1993-115953	19931002
	JP 07145192	A2	19950606	JP 1993-251960	19931007
PRAI	US 1992-882793		19920514		
	EP 1993-115953		19931002		

## WEST Search History

DATE: Friday, June 28, 2002

Set Name Query  
side by side

Hit Count Set Name  
result set

*DB=USPT,PGPB; PLUR=YES; OP=ADJ*

L14	L13 and l12 and l11 and l10 and l9 and l8	1	L14
L13	426/565	818	L13
L12	426/139	347	L12
L11	426/104	1965	L11
L10	426/101	439	L10
L9	426/100	316	L9
L8	L7 and l6 and l5 and l4 and l3	96	L8
L7	530/328	2144	L7
L6	530/327	1727	L6
L5	530/326	2263	L5
L4	530/300	3094	L4
L3	530/350	9761	L3
L2	6096867	2	L2
L1	6090917	4	L1

END OF SEARCH HISTORY

## WEST Search History

DATE: Thursday, July 11, 2002

<u>Set Name</u> side by side	<u>Query</u>	<u>Hit Count</u>	<u>Set Name</u> result set
<i>DB=USPT,PGPB; PLUR=YES; OP=ADJ</i>			
L9	L8 and l7 and l6 and l4 and l3	0	L9
L8	530/328	2153	L8
L7	530/327	1736	L7
L6	530/326	2272	L6
L5	530/300	3131	L5
L4	530/350	9880	L4
L3	l1 and l2	71	L3
L2	514/2	7246	L2
L1	514/1	378	L1

END OF SEARCH HISTORY



	Type	L #	Hits	Search Text	DBs	Time Stamp
1	IS&R	L1	223	(514/350).CCLS.	USPAT; US-PGP UB	2002/06/28 08:11
2	BRS	L2	134060	l1 and anti-freeze protein	USPAT; US-PGP UB	2002/06/28 08:12
3	BRS	L3	735	l2 and lichen	USPAT; US-PGP UB	2002/06/28 08:12
4	BRS	L4	124	l3 and glycosylation	USPAT; US-PGP UB	2002/06/28 08:14

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File 155:MEDLINE(R) 1966-2002/Jul W1

File 5:Biosis Previews(R) 1969-2002/Jul W1

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File 315:ChemEng & Biotech Abs 1970-2001/Dec

(c) 2002 DECHEMA

File 73:EMBASE 1974-2002/Jul W1

(c) 2002 Elsevier Science B.V.

File 399:CA SEARCH(R) 1967-2002/UD=13627

(c) 2002 AMERICAN CHEMICAL SOCIETY

File 351:Derwent WPI 1963-2002/UD,UM &UP=200243

(c) 2002 Thomson Derwent

?ds

Set	Items	Description
S1	7128	ANTI()FREEZE? ? OR ANTIFREEZE? ?
S2	29665	LICHEN? ?
S3	460	UMBILICARIA
S4	135	AU=SIDEBOTTOM C? OR AU=SIDEBOTTOM, C?
S5	72	AU=SMALLWOOD M? OR AU=SMALLWOOD, M?
S6	17	AU=BYASS L? OR AU=BYASS, L?
S7	25	S1 AND (S4-S6)
S8	6	S7 AND (S2 OR S3)
S9	8	S1 AND (S2 OR S3)
S10	8	S8 OR S9
S11	5	RD S10 (unique items)

?t 11/7/all

11/7/1 (Item 1 from file: 155)

DIALOG(R) File 155:MEDLINE(R)

10778477 20318565 PMID: 10860621

Distribution and characterization of recrystallization inhibitor activity in plant and lichen species from the UK and maritime Antarctic.

Doucet C J; Byass L; Elias L; Worrall D; Smallwood M; Bowles D J

The Plant Laboratory, University of York, United Kingdom.

Cryobiology (UNITED STATES) May 2000, 40 (3) p218-27, ISSN 0011-2240 Journal Code: 0006252

Document type: Journal Article

Languages: ENGLISH

Main Citation Owner: NLM

Record type: Completed

Extracts from a range of evolutionarily diverse plant and lichen species from the UK and maritime Antarctic have been assayed for inhibition of ice recrystallization. Approximately 25% of overwintering UK species and all Antarctic species exhibited antifreeze activity when exposed to low temperature. Preliminary characterization of the active extracts has demonstrated that the molecules co-opted to antifreeze activity by different species are biochemically diverse. Copyright 2000 Academic Press.

Record Date Created: 20000725

11/7/2 (Item 1 from file: 399)

DIALOG(R) File 399:CA SEARCH(R)

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135357072 CA: 135(25)357072r PATENT

Anti-freeze proteins, their production and use  
INVENTOR(AUTHOR): Berry, Mark John; Doucet, Charlotte Juliette; Lundheim, Rolv Sigmund; Sevilla, Marie-pierre; Whiteman, Sally-anne  
LOCATION: UK;  
ASSIGNEE: Unilever Plc; Unilever Nv; Hindustan Lever Limited  
PATENT: PCT International ; WO 200183534 A1 DATE: 20011108  
APPLICATION: WO 2001EP3927 (20010406) \*GB 200010314 (20000427)  
PAGES: 42 pp. CODEN: PIXXD2 LANGUAGE: English CLASS: C07K-014/41A;  
A23G-009/02B; A23L-003/3526B DESIGNATED COUNTRIES: AE; AG; AL; AM; AT; AU;  
AZ; BA; BB; BG; BR; BY; BZ; CA; CH; CN; CR; CU; CZ; DE; DK; DM; DZ; EE; ES;  
FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC;  
LK; LR; LS; LT; LU; LV; MA; MD; MG; MK; MN; MW; MX; MZ; NO; NZ; PL; PT; RO;  
RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; TZ; UA; UG; US; UZ; VN; YU; ZA;  
ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM DESIGNATED REGIONAL: GH; GM; KE; LS  
; MW; MZ; SD; SL; SZ; TZ; UG; ZW; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB;  
GR; IE; IT; LU; MC; NL; PT; SE; TR; BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML;  
MR; NE; SN; TD; TG

SECTION:

CA217006 Food and Feed Chemistry  
CA203XXX Biochemical Genetics

IDENTIFIERS: Nephroma antifreeze protein frozen food, lichen antifreeze protein frozen food

DESCRIPTORS:

Confectionery... DNA sequences... Food additives... Food processing...

Frozen foods... Genetic engineering... Genetic vectors... Lichen...

Nephroma arcticum... Protein sequences...

anti-freeze proteins, prodn. and use

Gene, microbial...

antifreeze protein; anti-freeze proteins, prodn. and use

Proteins, specific or class...

antifreeze; anti-freeze proteins, prodn. and use

Glycosylation...

biol.; anti-freeze proteins, prodn. and use

Primers(nucleic acid)...

DNA; anti-freeze proteins, prodn. and use

DNA...

primer; anti-freeze proteins, prodn. and use

CAS REGISTRY NUMBERS:

372489-97-9 N-terminal amino acid sequence of antifreeze protein from  
Nephroma arcticum; anti-freeze proteins, prodn. and use

372469-51-7 primer nucleic acid sequence; anti-freeze proteins, prodn. and  
use

11/7/3 (Item 2 from file: 399)

DIALOG(R) File 399:CA SEARCH(R)

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131115671 CA: 131(9)115671k PATENT

Lichen antifreeze protein for use in frozen food

INVENTOR(AUTHOR): Sidebottom, Christopher Michael; Smallwood, Margaret  
Felicia; Byass, Louise Jane

LOCATION: Neth.

ASSIGNEE: Unilever N. V.; Unilever PLC

PATENT: PCT International ; WO 9937673 A2 DATE: 19990729

APPLICATION: WO 98EP8554 (19981223) \*GB 981420 (19980122)

PAGES: 20 pp. CODEN: PIXXD2 LANGUAGE: English CLASS: C07K-014/41A;

A23G-009/02B DESIGNATED COUNTRIES: AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; CA; CH; CN; CU; CZ; DE; DK; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IN; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MD; MG; MK; MN; MW; MX; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; UA; UG; US; UZ; VN; YU; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM

DESIGNATED REGIONAL: GH; GM; KE; LS; MW; SD; SZ; UG; ZW; AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; BF; BJ; CF; CG; CI; CM; GA; GN; GW; ML; MR; NE; SN; TD; TG

SECTION:

CA217004 Food and Feed Chemistry

IDENTIFIERS: lichen antifreeze protein frozen food, ice cream lichen antifreeze protein

DESCRIPTORS:

Glycoproteins, specific or class... Proteins, specific or class...

antifreeze; lichen antifreeze protein for use in frozen food

Confectionery... Frozen foods... Gene, microbial... Ice cream... Lichen...

Protein sequences... Umbilicaria antarctica...

lichen antifreeze protein for use in frozen food

CAS REGISTRY NUMBERS:

232255-37-7 N-terminal sequence; lichen antifreeze protein for use in frozen food

11/7/4 (Item 1 from file: 351)

DIALOG(R) File 351: Derwent WPI

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014197042

WPI Acc No: 2002-017739/200202

Recombinantly produced Nephroma arcticum antifreeze proteins useful as additives for froze confectionery

Patent Assignee: UNILEVER PLC (UNIL ); HINDUSTAN LEVER LTD (UNIL );

UNILEVER NV (UNIL )

Inventor: BERRY M J; DOUCET C J; LUNDHEIM R S; SEVILLA M; WHITEMAN S

Number of Countries: 094 Number of Patents: 002

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 200183534	A1	20011108	WO 2001EP3927	A	20010406	200202 B
AU 200146533	A	20011112	AU 200146533	A	20010406	200222

Priority Applications (No Type Date): GB 200010314 A 20000427

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
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WO 200183534	A1	E	39	C07K-014/41	
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Designated States (National): AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW MZ NL OA PT SD SE SL SZ TR TZ UG ZW

AU 200146533 A C07K-014/41 Based on patent WO 200183534

Abstract (Basic): WO 200183534 A1

NOVELTY - An antifreeze protein which is derived from the lichen Nephroma arcticum, is new.

DETAILED DESCRIPTION - INDEPENDENT CLAIMS are also included for the following:

- (1) a nucleic sequence (II) encoding an antifreeze protein (I);
- (2) a vector (III) comprising nucleic acid sequence (II);
- (3) a method (IV) for producing an antifreeze protein (AFP) (I), comprising:
  - (i) harvesting *Nephroma arcticum* from the wild; and
  - (ii) preparing a protein-containing extract from the material of step (i), (the extract exhibits AFP activity);
- (4) a genetically modified organism (V), containing the nucleic acid sequence (II);
- (5) a protein-containing extract (VI) exhibiting AFP activity, prepared by (III) (the extract is suitable for use as a food additive); and
- (6) a food product (VII) comprising (VI).

USE - The antifreeze is useful as a food additive for altering the freezing characteristics of foods, especially frozen confectionery products (claimed).

pp; 39 DwgNo 0/0

Derwent Class: B04; D13; D16

International Patent Class (Main): C07K-014/41

International Patent Class (Additional): A23G-009/02; A23L-003/3526

11/7/5 (Item 2 from file: 351)  
 DIALOG(R)File 351:Derwent WPI  
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012638491

WPI Acc No: 1999-444595/199937

New isolated antifreeze protein obtained from Lichen, used for the preparation of food products, particularly frozen confectionery products  
 Patent Assignee: SIDEBOTTOM C M (SIDE-I); UNILEVER NV (UNIL); UNILEVER PLC (UNIL)

Inventor: BYASS L J; SIDEBOTTOM C M; SMALLWOOD M F

Number of Countries: 085 Number of Patents: 010

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
WO 9937673	A2	19990729	WO 98EP8554	A	19981223	199937 B
AU 9926148	A	19990809	AU 9926148	A	19981223	200001
BR 9814760	A	20001017	BR 9814760	A	19981223	200056
			WO 98EP8554	A	19981223	
EP 1049713	A2	20001108	EP 98966922	A	19981223	200062
			WO 98EP8554	A	19981223	
CZ 200002693	A3	20001213	WO 98EP8554	A	19981223	200103
			CZ 20002693	A	19981223	
SK 200001093	A3	20010118	WO 98EP8554	A	19981223	200108
			SK 20001093	A	19981223	
CN 1284085	A	20010214	CN 98813206	A	19981223	200130
HU 200100410	A2	20010628	WO 98EP8554	A	19981223	200143
			HU 2001410	A	19981223	
JP 2002508303	W	20020319	WO 98EP8554	A	19981223	200222
			JP 2000528594	A	19981223	
MX 2000005140	A1	20010501	MX 20005140	A	20000525	200227

Priority Applications (No Type Date): GB 981420 A 19980122

Patent Details:

Patent No	Kind	Lan	Pg	Main IPC	Filing Notes
WO 9937673	A2	E	19	C07K-014/41	

Designated States (National): AL AM AT AU AZ BA BB BG BR BY CA CH CN CU  
CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC  
LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL  
TJ TM TR TT UA UG US UZ VN YU ZW

Designated States (Regional): AT BE CH CY DE DK EA ES FI FR GB GH GM GR  
IE IT KE LS LU MC MW NL OA PT SD SE SZ UG ZW

AU 9926148 A C07K-014/41 Based on patent WO 9937673

BR 9814760 A C07K-014/41 Based on patent WO 9937673

EP 1049713 A2 E C07K-014/41 Based on patent WO 9937673

Designated States (Regional): AT BE CH CY DE DK ES FI FR GB GR IE IT LI  
LU MC NL PT SE

CZ 200002693 A3 C07K-014/41 Based on patent WO 9937673

SK 200001093 A3 C07K-014/41

CN 1284085 A C07K-014/41

HU 200100410 A2 C07K-014/41 Based on patent WO 9937673

JP 2002508303 W 19 C07K-014/41 Based on patent WO 9937673

MX 2000005140 A1 A23G-009/02

Abstract (Basic): WO 9937673 A2

NOVELTY - A novel antifreeze protein (AFP) obtained from Lichen  
is disclosed

DETAILED DESCRIPTION - A novel AFP which can be derived from  
Lichen comprises an apparent mol. wt. of 20-28kD and has an N-terminal  
amino acid sequence which shows at least 80% overlap with:  
A-P-A-W-M-D-A-E-S-F-G-A-I-A-H-G-G-L (I); and modified versions and  
isoforms of this protein.

INDEPENDENT CLAIMS are also included for:

(1) A nucleic acid sequence encoding an antifreeze protein as  
above; and

(2) A food product containing the antifreeze protein.

USE - The AFP can conveniently be used in food products, preferably  
in food products which are frozen or intended to be frozen. Especially  
preferred is the use of AFPs in products which are heated e.g. by  
pasteurization or sterilization prior to freezing and in frozen  
confectionery products.

ADVANTAGE - Using the AFP ingredient, mixes can be frozen under  
quiescent conditions, e.g. in a shop or home freezer without the  
formation of unacceptable ice crystal shapes and hence with a texture  
different to products normally obtained via quiescent freezing.

pp; 19 DwgNo 0/0

Derwent Class: D13; D16

International Patent Class (Main): A23G-009/02; C07K-014/41

International Patent Class (Additional): C12N-015/09; C12P-021/02;

C12R-001-645

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